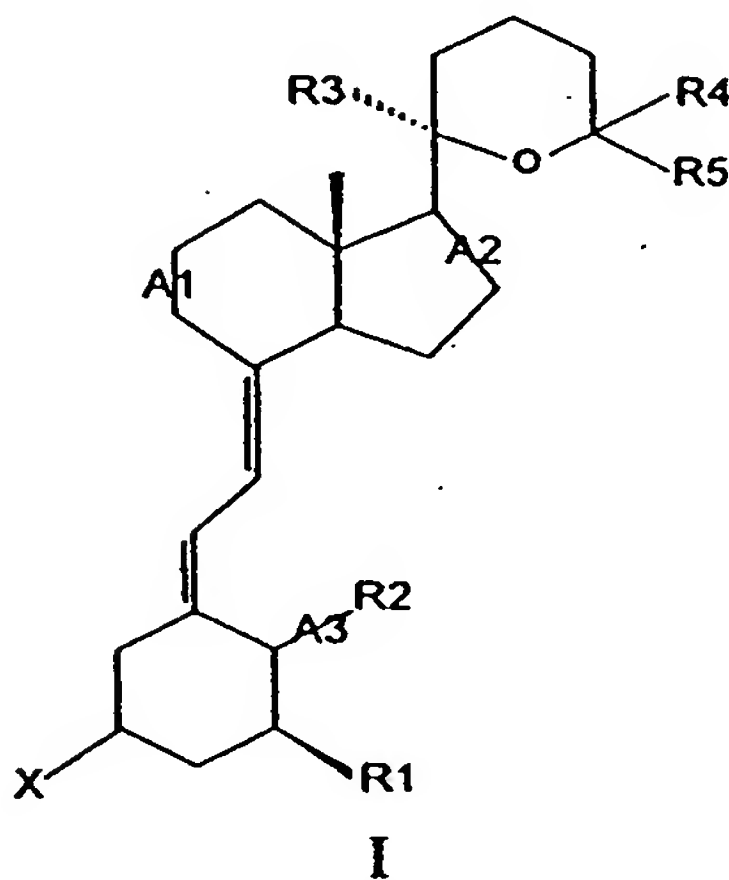


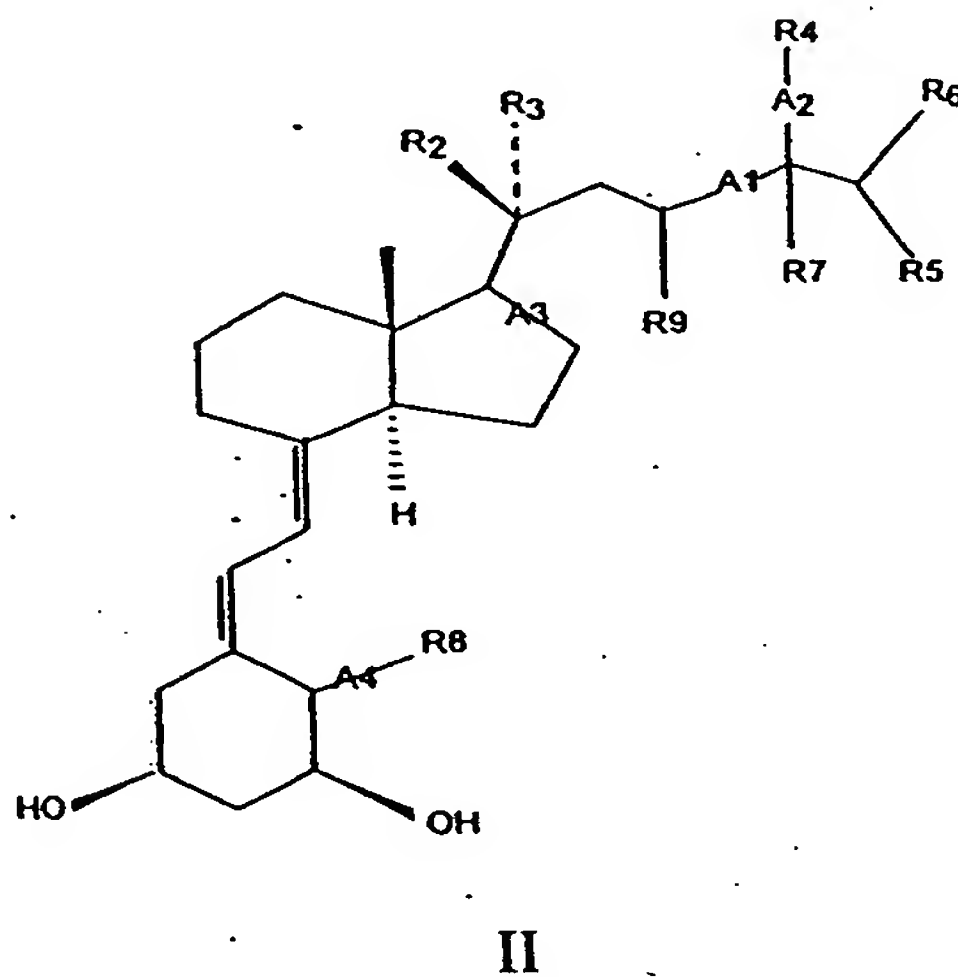
What is claimed is:

1. An isolated cyclic ether vitamin D3 compound having the formula (I) as follows:



, wherein A<sub>1</sub>, A<sub>2</sub> and A<sub>3</sub> are a single or a double bond; X, R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub> and R<sub>5</sub> are selected from the group consisting of a hydrogen, a halogen, a haloalkyl, a hydroxy, a hydroxy-protecting group, an alkyl, an alkenyl, an alkynyl, an alkoxy, an aryl group and a heterocyclic group.

2. An isolated 3-epi form of 1 $\alpha$ -hydroxy-vitamin D3 compounds having the formula II as follows:



, wherein A<sub>1</sub> is a single, a double, or a triple bond; A<sub>2</sub>, A<sub>3</sub> and A<sub>4</sub> are each independently selected from the group consisting of a single or a double bond; R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>7</sub>, R<sub>8</sub> and R<sub>9</sub> are independently selected from the group consisting of a hydrogen, a deuterium, a deuterioalkyl, a hydroxy, an alkyl, an alkoxide, an O-acyl, a halogen, a haloalkyl, a hydroxyalkyl, an amine or a thiol group, and wherein the pairs of R<sub>2</sub> and R<sub>3</sub>, and R<sub>4</sub> and R<sub>7</sub> taken together are an oxygen atom; and R<sub>5</sub> and R<sub>6</sub> are independently

selected from the group consisting of a hydrogen, a deuterium, a halogen, an alkyl, a hydroxyalkyl, a haloalkyl, and a deuterioalkyl.

3. The compound of claim 2, which is  $1\alpha(\text{OH})$  vitamin D<sub>3</sub>,  $1\alpha,24$  dihydroxy 3-epi vitamin D<sub>3</sub>,  $1\alpha$  hydroxy 24-ethyl 3-epi vitamin D<sub>3</sub>,  $1\alpha$  hydroxy 24-methyl 3-epi vitamin D<sub>3</sub>, or  $1\alpha, 24$ -dihydroxy 24-methyl 3-epi vitamin D<sub>3</sub>.
4. A method of treating a disorder characterized by an aberrant activity of a vitamin D<sub>3</sub>-responsive cell, comprising administering to a subject an effective amount of a vitamin D<sub>3</sub> compound having the formula (I) or (II) of any of claims 1 or 2, such that the aberrant activity of the vitamin D<sub>3</sub>-responsive cell is reduced.
5. The method of claim 4, wherein the disorder comprises an aberrant activity of a hyperproliferative skin cell.
6. The method of claim 4, wherein the disorder comprises an aberrant activity of an endocrine cell.
7. The method of claim 6, wherein the endocrine cell is a parathyroid cell and the aberrant activity is processing and/or secretion of parathyroid hormone.
8. The method of claim 7, wherein the disorder is secondary hyperparathyroidism.
9. The method of claim 8, wherein the disorder comprises an aberrant activity of a bone cell.
10. The method of claim 9, wherein the disorder is selected from the group consisting of osteoporosis, osteodystrophy, senile osteoporosis, osteomalacia, rickets, osteitis fibrosa cystica, renal osteodystrophy, secondary hyperparathyroidism, cirrhosis, and chronic renal disease.
11. The method of claim 4, wherein the subject is a mammal.
12. The method of claim 11, wherein the mammal is a human.
13. A method of ameliorating a deregulation of calcium and phosphate metabolism, comprising administering to a subject a therapeutically effective amount of a 3-epi vitamin D<sub>3</sub> compound of any of claims 2 or 3, so as to ameliorate the deregulation of the calcium and phosphate metabolism.
14. The method of claim 13, wherein the deregulation of the calcium and phosphate metabolism leads to osteoporosis.
15. A pharmaceutical composition comprising, a therapeutically effective amount of a vitamin D<sub>3</sub> compound of any of claims 1 or 2, and a pharmaceutically acceptable carrier.

16. The composition of claim 15, which is suitable for topical or oral administration.
17. A packaged compound, comprising a vitamin D<sub>3</sub> compound of any of claims 1 or 2, packaged with instructions for use of the compound for treating a disorder  
5 characterized by an aberrant activity of a vitamin D<sub>3</sub>-responsive cell.